

**PREFERENTIAL TAXATION AND PORTFOLIO CHOICE: SOME
EMPIRICAL EVIDENCE**

Harvey Galper and Dennis Zimmerman

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PREFERENTIAL TAXATION AND PORTFOLIO CHOICE:

SOME EMPIRICAL EVIDENCE

Harvey Galper*
and
Dennis Zimmerman**

I. Introduction

The Internal Revenue Code contains many provisions which confer special tax treatment on particular types or classes of investment activity. Economic theory suggests this preferential taxation of assets will alter individuals' portfolio choices such that the distribution of these tax benefits should be heavily skewed toward higher marginal tax brackets and higher income investors. The consequence is a lower effective degree of progressivity in the tax structure.^{1/} However, the extent to which this preferential taxation actually affects asset choice and the distribution of income is unknown because up to now no data set had been available for deriving separate distributions of holdings of various classes of assets by marginal tax rate.

The Projector-Weiss survey conducted for the Board of Governors of the Federal Reserve System comes closest to meeting these requirements.^{2/} However, their survey ranks individuals by income class rather than marginal tax rate. Feldstein has analyzed these data, with the general conclusion that high income investors (and thus, on the average, high marginal tax rate investors) tend to hold larger proportions

of more preferentially taxed financial assets in their portfolios than do low income investors.^{3/}

No similar data set exists for comparing the distribution of a variety of asset holdings by marginal tax bracket. The preferentially taxed asset most thoroughly investigated in isolation is tax-exempt state and local bonds. Ott and Meltzer suggest the average marginal tax rate of the non-institutional investors in such bonds is 60 percent.^{4/} Galper and Peterson present an estimate of the cumulative percentage of tax-exempt bond holdings by marginal tax rate.^{5/} Neither of these sources is particularly useful for our purposes without comparable data on other assets whose tax treatment differs from tax-exempt bonds. Furthermore, for empirical work, the appropriate marginal tax rate according to which an individual evaluates the tax benefits to be gained from investment in preferentially taxed assets is his pre-investment marginal tax rate. His ~~pre~~-investment marginal tax rate is the marginal tax rate he would incur in the absence of the income flow generated by the investment.^{6/} Data for calculating these pre-investment marginal tax rates have not previously been available.

The purpose of this paper is to use a special Treasury tabulation of unincorporated business data by income and pre-investment marginal tax rate to demonstrate that the distribution of these tax benefits does tend to conform to a priori

expectations. Section II discusses how preferential taxation enters the investment decision. It illustrates, using a three-asset model, the expected impact of preferential taxation on portfolio choice and the income distribution. Section III discusses the applicability of the special tabulation data on income flows for testing whether actual investment choices tend to conform to the pattern suggested in Section II, and suggests using gross losses for this task. The major preferential tax provisions are described by industry. Preferentially taxed industries are then selected for comparison based upon analysis of industry gross losses and gross profits. Section IV presents and analyzes empirical distributions of individuals' unincorporated business gross losses from these industries. The main finding is that gross losses from those industries which are most preferentially taxed accrue disproportionately to the highest marginal tax bracket investors. Some qualifications of the results are discussed in Section V, and the conclusions are summarized in Section VI.

II. Preferential Taxation and Portfolio Choice

Following Bailey, we may show that preferential taxation of assets affects the before-tax rates of return on those assets and that the value of this preferential taxation is directly related to an investor's marginal tax rate (MTR).^{7/} We may represent preferential taxation as excess deductions -- such

as accelerated depreciation, percentage depletion allowances, etc. -- with the result that only a proportion α , ($\alpha < 1$), of the before-tax rate of return is taxable. In general, an asset that has part of its income exempt from taxes ($\alpha < 1$) will command a premium which will tend to reduce its before-tax rate of return. The more of the income that is tax exempt, the greater the premium, and therefore, the lower is the before-tax rate of return.

The tax law contains a variety of tax provisions which provide investors with considerable choice among j differentially taxed real and financial assets ($j = 1 \dots m$). The choices range from tax-exempt bonds ($\alpha_1 = 0$) to fully taxed corporate bonds or physical assets employed in retail trade ($\alpha_m = 1$), with innumerable partially taxed assets in between such as those in real estate (accelerated depreciation), in oil and gas extraction (percentage depletion and expensing of drilling costs) or those receiving capital gains tax treatment -- all characterized as α_j investments, $0 < \alpha_j < 1$.^{8/} As noted above, the greater the degree of excess deductions (the lower is α_j) the greater the premium on the asset and, other things equal such as risk and transactions costs, the lower is its before-tax rate of return, r_b^j . In other words, $\alpha_j < \alpha_{j+1}$ implies $r_b^j < r_b^{j+1}$.

To investigate the relationship between an individual investor with marginal tax rate equal to t and his marginal portfolio decision, we define the before-tax rate of return r_b for three preferentially taxed assets: tax-exempt bonds (r_b^1 with $\alpha_1 = 0$), a partially taxed investment (r_b^2 with $0 < \alpha_2 < 1$), and fully taxable bonds (r_b^3 with $\alpha_3 = 1$). For the fully taxable asset ($\alpha_3 = 1$), the after-tax yield is

$$(1) r_a^3 = r_b^3 (1 - t)$$

For the partially taxed asset ($0 < \alpha_2 < 1$), the after-tax return is

$$(2) r_a^2 = r_b^2 - \alpha_2 t r_b^2 = r_b^2 (1 - \alpha_2 t)$$

Finally, for the tax-exempt investment ($\alpha_1 = 0$), the after-tax yield is

$$(3) r_a^1 = r_b^1 - 0 \cdot t r_b^1 = r_b^1$$

In making marginal investment decisions, an individual investor may be expected to choose that asset which yields the highest after-tax rate of return. This does not mean that tax preferred investments are necessarily the best investment for all investors in all tax brackets. In fact, we can define rules according to which individuals choose their income maximizing investments. First, it is necessary to determine the particular MTRs along the entire structure of MTRs which represent the break-even point between any pair of investments.

Take first a tax-exempt investment ($\alpha_1 = 0$) and a partially taxed investment ($0 < \alpha_2 < 1$). In this case, finding the break-even MTR, call it t^* , which equates $r_a^1 = r_a^2$ involves solving the following equation for t^* :

$$(4) \quad r_b^1(1 - \alpha_1 t^*) = r_b^2(1 - \alpha_2 t^*)$$

This yields

$$(5) \quad t^* = (r_b^2 - r_b^1) / \alpha_2 r_b^2$$

Thus, the marginal investment decision of all investors with marginal tax rates above t^* should be to hold investments with higher excess deductions (α_1), sacrificing before-tax return for non-taxable income and higher after-tax return. Investors with marginal tax rates below t^* should make marginal investments with lower excess deductions (α_2 , if not even higher α investments) to realize higher after-tax returns.^{9/}

In the same manner one can determine the break-even MTR between partially taxed investments and fully taxed investments ($\alpha_3 = 1$):

$$(9) \quad t^{**} = (r_b^3 - r_b^2) / (r_b^3 - \alpha_2 r_b^2)$$

Those taxpayers with marginal tax rates above t^{**} but below t^* prefer non-taxable income to before-tax return, while those with marginal tax rates below t^{**} prefer before-tax return r_b^3 to non-taxable income, each in order to maximize after-tax return.

Thus, investors above t^* should prefer the most preferentially taxed asset as a marginal investment; investors below t^{**} should prefer the least preferentially taxed asset; and investors between t^* and t^{**} should prefer the partially taxed asset.^{10/} These results suggest that, other things equal, distributions of holdings of assets by MTR should become more skewed toward higher MTRs as the degree of preferential taxation of the income from those assets increases.

III. The Data and Preferential Tax Provisions

To examine the relationship between preferential taxation and portfolio choice, this analysis uses data from a special Treasury Department project undertaken by the Statistics Division of IRS. This project, which collected data from a sample of individual 1040 tax returns and their associated schedules C and E for the year 1972, indicates the taxable income from each unincorporated business along with its industry designation. These data provide two improvements essential to our purpose over currently available tax information -- the capacity to disaggregate an individual's unincorporated business income by industry and by individual business entity generating the income.^{11/} The industry disaggregation is essential if one wishes to analyze the portfolio choices of individuals as a function of differential tax treatment of industries. Entity disaggregation is essential in

order to construct, for each individual, gross income prior to loss offsets as a step in the computation of the pre-investment MTR, that is the MTR in the absence of the income flowing from the investment.

Unfortunately, we cannot test directly the hypothesis that asset holdings of preferentially taxed assets are skewed to higher MTR investors because our data do not include asset holdings or investments, but rather the flows of taxable income or losses earned in various industries. However, an important aspect of preferential tax provisions is the allowance of excess deductions which generate tax losses in situations where positive economic income is being earned. These tax losses can then be used to reduce taxes on other income. Since tax preferences are often reflected in gross losses, it seems reasonable to use the distribution of gross losses to represent investment in tax-preferred industries.

This use of data on losses is consistent with the observation that those tax losses which are also true economic losses do not reduce α and thus are not of particular benefit to high MTR taxpayers. We would, therefore, not expect to find disproportionate shares of economic losses--that is, losses from non-preferentially taxed industries--in high MTR taxpayers' portfolios.

An additional consideration is that not all investors in any industry are tax-motivated -- some invest because of knowledge of the industry or various non-economic considerations. Since losses themselves tend to be part of tax preferences, restricting the analysis to investors with gross losses may come closer to identifying the set of tax-motivated investors.

Finally, it should be noted that we are not primarily concerned with the actual level of investment as it may be represented by gross losses, but rather with the distribution of investment. There is no reason to believe that the distribution of those tax preferences which appear as tax losses would not be distributed according to investment holdings.

Preferential taxation may take several forms. The devices most commonly used in 1972, the year for which our data are applicable, are by industry:^{12/}

A. Oil and Gas Extraction

1. Intangible drilling costs -- The investor may ~~expense~~ intangible drilling and development costs which, in the absence of the statutory provision, would have to be capitalized and deducted over the life of a successful well or at the time the well is abandoned.
2. Percentage depletion allowance -- The investor may claim a deduction for a fixed percentage of the

value of the resource being extracted as compensation for the "depletion" of the resource, regardless of the amount actually extracted.

B. Real Estate

1. Accelerated depreciation -- The investors may use a method of depreciation which results in allowable depreciation deductions in excess of economic depreciation during the early years of the investment.
2. Construction period taxes and interest -- The investors may expense taxes, interest and other carrying charges attributable to the construction period, rather than add such expenses to the cost of the property and depreciate them over the useful life of the building.
3. Conversion of ordinary income into capital gain -- To the extent that depreciation allowances exceed economic depreciation, the "basis" of the asset is artificially reduced and upon the sale of the asset ordinary income may be converted into more favorable capital gains. The existing depreciation recapture provisions do not completely eliminate the advantage of conversion.

C. Livestock Feeding and Breeding

1. Deduction of prepaid expenses and development costs -- Farmers have been allowed for 50 years to utilize the cash method of accounting and have not been required to maintain inventory accounts. This allows expenses to be deducted in the year actually paid without regard to whether they produce income in that year or not, and encourages the year-end purchase of supplies which will not be used until the following year.
2. Accelerated depreciation -- Purchased animals held for breeding purposes and equipment can be depreciated for tax purposes at a rate in excess of economic depreciation during the early years of the investment.
3. Conversion of ordinary income into capital gains -- In general, livestock held for breeding purposes for more than 24 months before being sold generate capital gains. This is particularly important in breeding operations because there is no recapture of either depreciation (since raised animals have a zero "basis") or farm losses generally (if the investor kept his annual farm losses under \$25,000). Only the investor's profit on the sale of purchased

breeding animals is subject to recapture of previous depreciation deductions.

D. Motion Pictures

1. Accelerated depreciation -- The "income forecast" method allows investors to determine depreciation deductions based on the ratio of the annual income of the film to the film's total estimated income. This method can result in deductions in excess of economic depreciation during the early years of the investment.
2. Expensing of production costs -- The cost of producing a film paid by a so-called production service partnership which does not own the film it produces are often deducted in the year paid or incurred rather than capitalized.

E. Fruit, Tree, Nut, and Vegetable; Forestry

1. Accelerated depreciation may be claimed with respect to equipment and purchased plants or trees.
2. "Preproductive period" development costs may often be expensed in the year paid or incurred rather than capitalized.
3. Conversion of ordinary income into capital gains.

F. Equipment - Rental, Leasing

1. Accelerated depreciation or 5-year amortization for certain equipment.
2. First year "bonus" depreciation -- For the first year the property is placed in service, a deduction is allowed for additional "bonus" depreciation of 20 percent of the cost of property.
3. Asset depreciation range (ADR) - Depreciation lives allowed under ADR may be as much as 20 percent shorter than guidelines lives.

Since tax preferences tend to be reflected in gross losses, unincorporated business income in the preferentially taxed industries should be characterized by a relatively high incidence of gross losses relative to gross profits. Table 1 presents gross profit and loss information for various industries classified by Standard Industrial Classification divisions, and for selected four digit subindustries which as we have indicated are preferentially taxed: Oil and Gas Extraction; Real Estate Operators; Livestock Feeding and Breeding; Fruit, Tree, Nut, and Vegetable; Forestry; Equipment Rental and Leasing; and Motion Picture Production and Distribution.

Several observations can be made based on these data. First, both the ratio of loss entities to profit entities and the ratio of dollars of loss to dollars of profit tend to be

TABLE 1

Ratio of Loss/Profit Entities and Dollars:
Unincorporated Business by Industry (Weighted Data)

| | : : Number of : Entities | : : Dollars |
|---|--------------------------------|----------------|
| Agriculture, Forestry, Fishing | .611 | .381 |
| Fruit, Tree, Nut, Vegetable | .595 | .435 |
| Livestock | .708 | .515 |
| Forestry | .925* | .468 |
| Mining | 1.404 | 1.879 |
| Oil and Gas Extraction | 1.479 | 2.351 |
| Construction | .140 | .093 |
| Manufacturing | .290 | .138 |
| Transportation, Communication, Gas | | |
| Electric, Sanitary Services | .310 | .152 |
| Wholesale Trade | .312 | .005 |
| Retail Trade | .453 | .148 |
| Finance, Insurance, Real Estate | .692 | .367 |
| Real Estate Operators except Developers and Lessors of Buildings | 1.018 | 1.342 |
| Services | .279 | .070 |
| Business Services-Equipment Rental, Leasing | .565 | .391 |
| Motion Picture Production, Distribution, etc. | .614* | 1.162 |

*Sample < 200 tax returns (unweighted)

lower in industry divisions receiving fewer tax preferences. Compare, for example, the ratios for Construction, Manufacturing, Transportation, Wholesale and Retail Trade with those for Agriculture, Mining, Finance, and Services. Second, within these latter divisions, the subindustries on which preferential taxation is targeted tend to have higher ratios than the division as a whole. Third, shelter subindustries Oil and Gas Extraction, Real Estate, Motion Pictures, and Livestock stand out as having particularly high incidence of losses, in terms of both entities and dollars. Finally, three of these four subindustries (excluding Livestock) are the only ones for which the ratio of dollars of gross loss to dollars of gross profits exceeds the ratio of number of loss to profit entities, which indicates they are the only subindustries for which average entity loss exceeds average entity profit.

Thus, we select for analysis Oil and Gas and Real Estate^{13/} as the most preferentially taxed subindustries in our sample. Motion pictures are eliminated due to their small sample size. For comparison, we select Wholesale Trade and Retail Trade as non-preferentially taxed industries, and Manufacturing as a partially taxed industry.

IV. The Distribution of Unincorporated Business Losses

Section II demonstrated that an individual's choice among numerous differentially taxed assets will be influenced by his marginal tax rate. Section III suggested that in the absence of data on asset or investment holdings, and since short-term tax losses are frequently the vehicle through which preferential tax benefits are taken, the distribution of gross losses is likely to be a good proxy for the distribution of assets. Accordingly, this section presents cumulative distributions of gross losses by Adjusted Gross Income and pre-investment MTR for those preferentially taxed industries identified in Section III.

The AGI distributions are presented in Table 2, in which each individual's gross losses (in the specified industry) are classified by the AGI reported on his tax return. Since AGI is directly related to MTR with aggregated data, we would expect that the more preferentially taxed industries would have gross loss distributions which are more skewed toward higher AGI classes. This is particularly noticeable for Real Estate and Oil and Gas Extraction when compared to Wholesale Trade, Retail Trade, and Manufacturing. The AGI at which median loss occurs is \$69,943 for Oil and Gas and \$35,571 for Real Estate, compared to \$3,776 for Retail Trade, \$6,269 for Wholesale Trade, and

TABLE 2

Cumulated Proportion of Unincorporated Business Losses
for Selected Industries,
Cumulated by Adjusted Gross Income of Investor

| AGI (1000's) | : Retail : Trade | : Wholesale : Trade | : Manufac- : turing | : Real : Estate | : Oil & Gas : Extraction |
|-----------------|---------------------|------------------------|------------------------|--------------------|-----------------------------|
| No AGI | .355 | .279 | .476 | .274 | .162 |
| 0 - 5 | .547 | .449 | .672 | .294 | .181 |
| 5 - 10 | .708 | .650 | .752 | .332 | .219 |
| 10 - 15 | .821 | .699 | .789 | .361 | .225 |
| 15 - 20 | .882 | .836 | .808 | .390 | .247 |
| 20 - 25 | .896 | .867 | .821 | .426 | .263 |
| 25 - 50 | .964 | .914 | .877 | .601 | .429 |
| 50 -100 | .983 | .970 | .924 | .769 | .607 |
| 100-200 | .992 | .983 | .950 | .878 | .771 |
| 200 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Approximate AGI of: 1/

| | | | | | |
|----------------------|----------|----------|----------|-----------|------------|
| 1st loss quintile | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$7,500 |
| Median loss | \$2,776 | \$6,269 | \$612 | \$35,571 | \$69,943 |
| 5th loss quintile | \$14,071 | \$18,686 | \$17,895 | \$128,440 | >\$200,000 |

1/ Calculated assuming uniform distribution within each class.

\$612 for Manufacturing. The AGI at which the fifth loss quintile occurs is greater than \$200,000 for Oil and Gas, \$128,440 for Real Estate, compared to \$14,071 for Retail Trade, \$18,686 for Wholesale Trade, and \$17,895 for Manufacturing.

Table 3 presents gross loss distributions by pre-investment MTR. This pre-investment MTR is based upon the assumption that each industry in turn represents the individual's marginal investment. Thus, in the Real Estate column of Table 3, gross real estate losses are added to the taxpayer's AGI and gross real estate profits are subtracted from AGI in order to establish pre-investment income. The MTR is then calculated based on the amount of this pre-investment income which is subject to tax.

Table 3 reinforces the results presented in Table 2--that the distribution of gross losses in an industry is more skewed as the degree of preferential taxation of the income from that industry increases. The MTR at which the median dollar of loss occurs differs dramatically, from .17 for Retail Trade to .55 for Oil and Gas. The MTR at which the first quintile of loss occurs ranges from .00 in Wholesale Trade and Retail Trade to .39 in Oil and Gas. The MTR at which the last quintile of loss occurs ranges from less than .24 in Retail Trade to .65 in Oil and Gas.

TABLE 3

Cumulated Proportion of Unincorporated Business Losses
for Selected Industries, Cumulated by Pre-Investment
Marginal Tax Rate of Investor

| Marginal Tax Rate | Retail : Trade | Wholesale : Trade | Manufac- : turing | Real : Estate | Oil & Gas : Extraction |
|----------------------|-------------------|----------------------|----------------------|------------------|---------------------------|
| 0 | .290 | .206 | .147 | .106 | .060 |
| 13-20 <u>1/</u> | .651 | .474 | .422 | .132 | .085 |
| 21-25 | .845 | .695 | .632 | .204 | .139 |
| 26-30 | .876 | .775 | .638 | .230 | .146 |
| 31-35 | .897 | .830 | .667 | .254 | .171 |
| 36-40 | .914 | .891 | .709 | .319 | .209 |
| 41-45 | .931 | .900 | .719 | .354 | .303 |
| 46-50 | .964 | .910 | .740 | .499 | .409 |
| 51-55 | .972 | .928 | .808 | .590 | .494 |
| 56-60 | .982 | .968 | .829 | .686 | .570 |
| 61-65 | .990 | .989 | .913 | .837 | .803 |
| >65 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Approximate marginal tax rate of: 2/

| | | | | | |
|----------------------|-----|-----|-----|-----|-----|
| 1st loss quintile | .00 | .00 | .00 | .25 | .39 |
| Median loss | .17 | .20 | .22 | .50 | .55 |
| 5th loss quintile | .24 | .32 | .54 | .64 | .65 |

- 1/ The first bracket rate is taken at 13 percent rather than 14 percent due to the interaction of the normal rate schedule and the minimum tax.
- 2/ Interpolated to nearest percentage point or first bracket rate from above distributions.

Lorenz curves may also be employed to highlight the substantial differences among the loss distributions of Table 3. For this purpose, it is useful to establish a reference distribution to which the individual industry loss distributions may be compared. For the initial computations, the broadest possible reference distribution available to us is used, namely the percentage distribution of all income tax returns by marginal tax rate. Again, the distribution is cumulated by pre-investment MTR, but in this case all net unincorporated business income, to the extent that an individual tax return has such income, is considered the marginal investment. Thus, as shown in Figure 1, the Lorenz curves relate the distribution of investors' losses for the particular industry in question (shown on the vertical axis) to the total distribution of individual tax returns (shown on the horizontal axis).

The diagonal line indicates perfect equality in that the distribution of losses in a particular industry is no more skewed when cumulated by MTR than the distribution of returns in general. A curve below the diagonal line indicates that any given percentage of returns receives a less than proportionate share of losses in a particular industry or, in other words, the loss distribution for the particular industry is skewed (relative to the distribution of all returns) to the upper end of the MTR range. We should note that pure scale effects cause

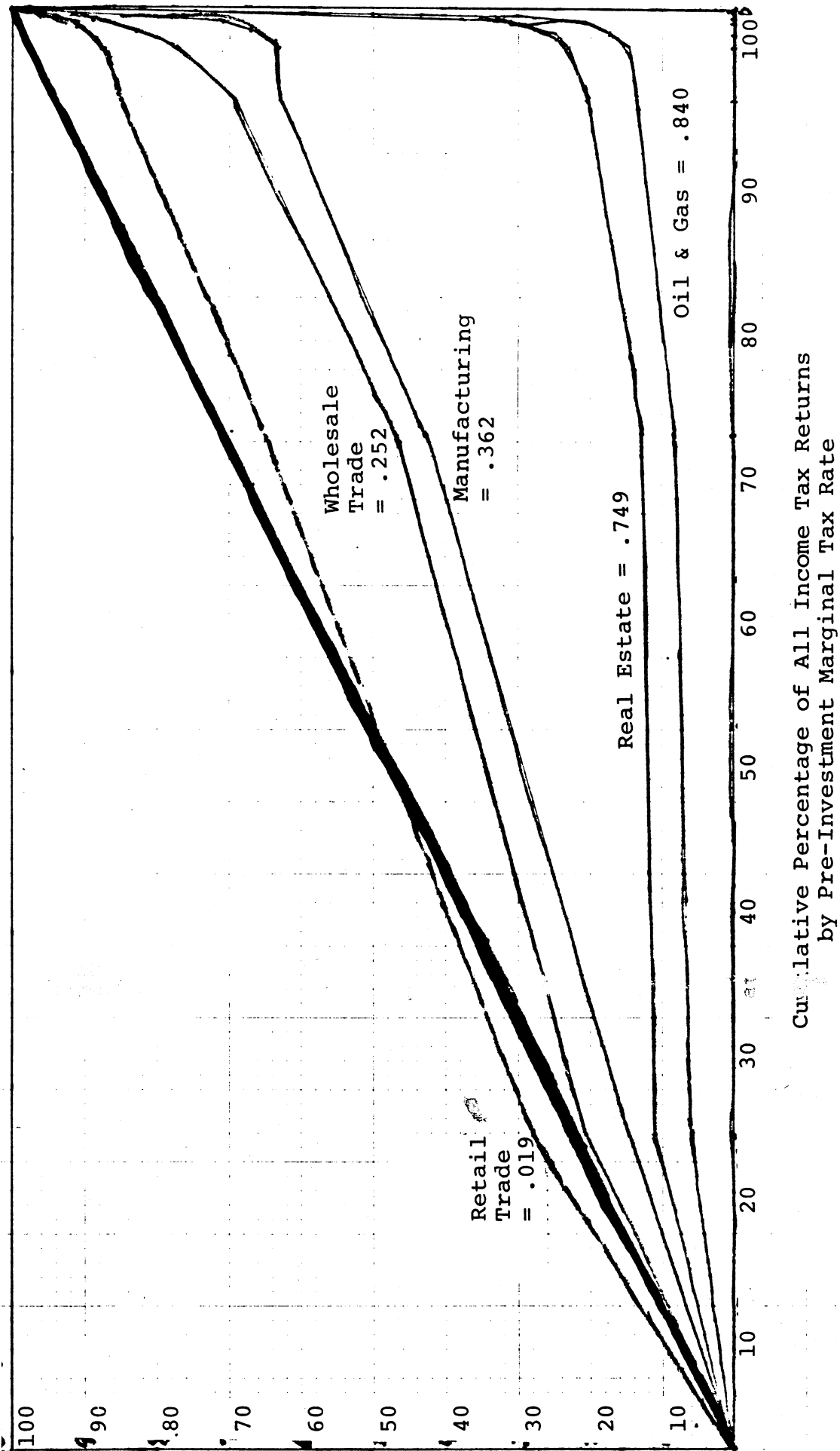
some skewing of the industry loss distributions, simply because higher MTR investors will generally have more resources to invest (and therefore a greater share of the losses) than lower MTR investors. However, scale effects cannot explain why higher MTR investors should choose one industry over another, and our main concern here is with comparisons across industries, that is, with the differences in the Lorenz curves of industries which are characterized by varying degrees of preferential taxation. Furthermore, as discussed below, while the choice of reference distribution will determine the absolute measure of inequality, or the degree of departure of the individual loss distributions from the diagonal line, it will not change the patterns across industries.

Figure 1 is striking visual evidence of these different distributional patterns. Retail Trade has a Gini coefficient of only .019, indicating very little inequality in the general population's holdings of Retail Trade losses, though there is overrepresentation for both the very lowest and highest MTR's. Contrasted with this are the Oil and Gas and Real Estate Gini coefficients of .840 and .749, respectively, indicating extreme inequality in the general population's holdings of losses in these preferentially taxed industries.

As noted, the overall skewness of the industry loss distributions depends upon the choice of the reference distribution.

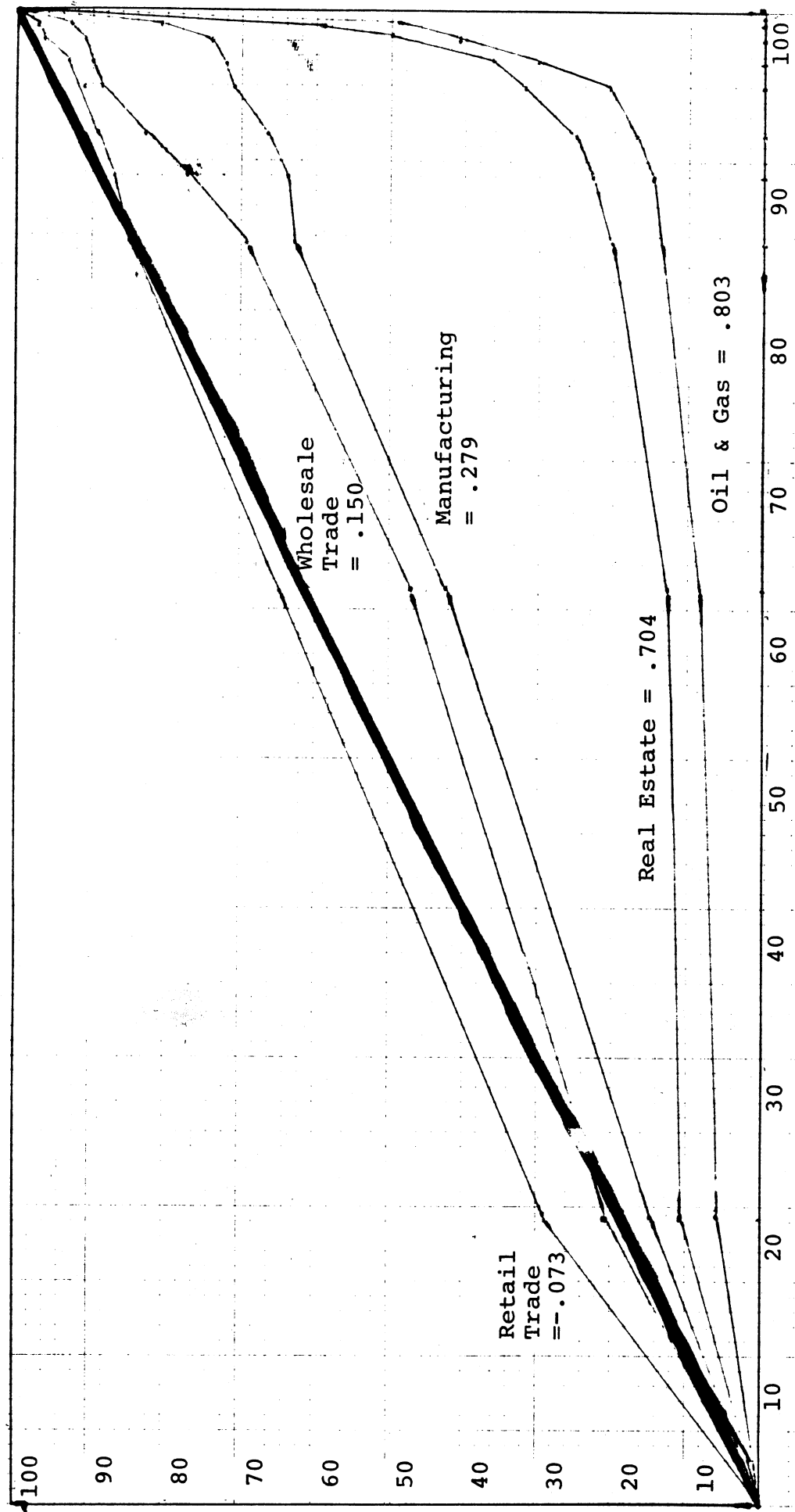
Cumulative Percentage of Gross
Industry Losses by Pre-Invest-
ment Marginal Tax Rate

FIGURE 1



Cumulative Percentage of Gross Industry Losses by Pre-Investment Marginal Tax Rate

Figure 2



Cumulative Percentage of All Income Tax Returns with Unincorporated Business Income by Pre-Investment Marginal Tax Rate

If we restrict our analysis solely to investors with unincorporated business income, we should expect individual industry Lorenz curves to be closer to the diagonal line. This is because returns with no business income whatsoever tend on the average to be lower MTR returns, and eliminating these returns makes the reference distribution and the industry loss distributions much closer together. Figure 2 presents Lorenz curves with the reference distribution (by MTR) of all individuals with unincorporated business income. Despite the lower Gini coefficients (G), the relationship of the industry curves to each other remains the same. Oil and Gas ($G=.803$) and Real Estate ($G=.704$) are still the most concentrated among investors with higher MTR's, Retail Trade ($G=-.073$) and Wholesale Trade ($G=.150$) are the most equally distributed, and Manufacturing ($G=.279$) is moderately skewed to higher MTR's.

V. Qualifications

The nature of the data used in this study is such that some qualifications are required in interpreting these results.

First, the MTR we observed may not be the MTR upon which the individual's investment decision was based--transitory income may cloud the calculation. Furthermore, since any losses which we observe are combinations of tax and economic losses, it may be that some investments incur genuine economic losses unrelated to tax considerations, even in the case of investments in real estate or oil and gas.

A second set of considerations derives from the fact that many returns have unincorporated business income from investments in more than one tax preferred industry. In this case, the MTR calculated for each industry separately is less than that obtained from looking at total tax preferred investments as a whole. Investors in tax sheltered industries are then classified in lower pre-investment MTR's than they really should be, and the tax preferred industry Lorenz curves appear less skewed. Such problems are inherent in a study which attempts to examine loss distributions for each industry individually.

A similar result occurs due to the fact noted above that at we call preferentially taxed industries are really a mixture of tax favored and non-tax favored elements. This also imparts to these industries a tendency towards greater equality in the Lorenz curves than would appear with uniformly taxed industries.^{14/} While such qualifications are worth noting, they do not change the basic conclusions of this paper. On the contrary, they strengthen these conclusions since they generally make it even harder for the data to show departures from equality.

VI. Conclusions

The results shown in Tables 2 and 3 and Figures 1 and 2 clearly indicate that investors with higher pre-investment MTR's

tend to acquire disproportionate shares of losses in those industries such as Real Estate and Oil and Gas Extraction which receive relatively favorable tax treatment. In contrast, investors with lower pre-investment MTR's tend to acquire disproportionate shares of losses in those industries such as Wholesale and Retail Trade which have relatively less access to favorable tax treatment. This is indeed confirming evidence of Bailey's assertions concerning portfolio choice and progressivity--that assets receiving preferential tax treatment generate tax losses which can be used to reduce taxes on other income, the value of which is a positive function of one's pre-investment MTR; that this allows high tax bracket investors to offer higher prices for these assets (accepting lower before-tax returns) in exchange for the relatively higher tax savings and after-tax rate of return; and that these assets therefore tend (other things equal) to settle disproportionately into the portfolios of investors with high pre-investment MTR's. The consequence of this is a lower effective degree of progression in the tax structure.

Footnotes

* Associate Director, Office of Tax Analysis, Department of Treasury;

** Economist, Program Analysis Division, General Accounting Office.

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1. Martin J. Bailey, "Progressivity and Investment Yields under U.S. Income Taxation," Journal of Political Economy, 1974, No. 6, pp. 1157-1175.
 2. Dorothy S. Projector and Gertrude S. Weiss, Survey of Financial Characteristics of Consumers, Washington, D.C., Federal Reserve Technical Papers, 1966.
 3. Martin Feldstein, "Personal Taxation and Portfolio Composition: An Econometric Analysis," Econometrica, 1976, No. 4, pp. 631-650.
 4. David Ott and Allan H. Meltzer, Federal Tax Treatment of State and Local Securities, Brookings Institution, Washington, D.C., 1963. They cite as their source a study by Roland I. Robinson, The Postwar Market for State and Local Government Securities, National Bureau of Economic Research, 1960.

5. Harvey Galper and George Peterson, "The Equity Effects of a Taxable Municipal Bond Subsidy," National Tax Journal, December 1973, pp. 611-624. Their estimates are derived from special tabulations of bond holdings by income class in Joseph Pechman and Benjamin Okner, "Individual Income Tax Erosion by Income Class," in U.S. Congress, Joint Economic Committee, The Economics of Federal Subsidy Programs, Part I - General Study Papers (U.S. Government Printing Office, Washington, D.C., 1972).
6. The pre-investment marginal tax rate literally applies to just the first dollar of investment income. Additional dollars of income may be taxed at higher rates, but this would depend on the size of the investment itself. Therefore, the only tax rate exogenous to the investment decision is that applicable to the first dollar.
7. Bailey, op. cit.
8. Actually, as Bailey, Ibid., has noted, there may even be negatively taxed assets such that the after-tax rate of return is increased by the application of the tax code. These effects are ignored here.
9. It is fully consistent that high tax bracket investors will be observed to hold some high α investments which they would not find profitable as a marginal investment. The

The Tax Reform Act of 1976 altered the benefits of many of these preferences. Also, the Act provided restrictions on the deduction for prepaid interest, substantially increased the impact of the minimum tax on individuals utilizing these preferential tax provisions, and tightened the depreciation ~~recapture~~ rules, including a provision for recapture of amounts deducted for intangible drilling expenses on productive wells. For a good summary of these provisions, see "Summary of the Tax Reform Act of 1976" (H.R. 10612, 94th Congress, Public Law 94-455), Joint Committee on Taxation, October 4, 1976.

13. It must be noted that livestock feeding and breeding, although also preferentially taxed, is unlike the other industries in that its primary preferential tax provision is capital gains. Not only are the benefits of capital gains taxation not reflected as tax losses, but they are not even reported as unincorporated business profits. Instead, they are reported on the 1040 return as capital gains income, never appearing on Schedules C and E. Thus, the .515 gross loss to gross profit ratio for Livestock in Table 1 is overstated, for the denominator (gross profit) does not even include the income attributable to its primary preferential tax provision. The losses shown, therefore, are likely to represent genuine economic losses. For these reasons, livestock was left out of the analysis.

14. For example, accelerated depreciation in real estate varies between residential and non-residential buildings, and between new and used buildings. The distribution of total real estate losses will therefore underestimate the skewness of that portion of real estate investment which is most preferentially taxed.